

UNCLASSIFIED

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)							DATE February 2000		
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development				PE NUMBER AND TITLE 0604823A Firefinder AN/TPQ-47				PROJECT DL85	
COST (In Thousands)	FY1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
DL85 Firefinder AN/TPQ-47	19601	39860	37363	26838	5995	0	0	0	134487
<p>A. <u>Mission Description and Justification:</u> The Firefinder AN/TPQ-47 will replace the AN/TPQ-37 Artillery Locating Radar. This program is in response to the approved Mission Need Statement (MNS) for the Advanced Firefinder System which describes an urgent need for a longer range and less manpower intensive radar. An Operational Requirements Document (ORD) for the Firefinder AN/TPQ-47 was approved 25 Sep 96. The Firefinder AN/TPQ-47 will double the current artillery range performance out to 60km and improve the target throughput up to 50 targets per minute in a highly mobile, transportable and survivable system. The Firefinder AN/TPQ-47 will provide a new capability of missile and rocket detection at ranges of 150-300 km and will be capable of alerting Theater Missile Defense Systems. The system will be capable of C-130 roll-on/roll-off transportability for rapid deployment. Crew size will be reduced from 12 to 8. This program will leverage off the AN/TPQ-36(V)8 Electronics Upgrade program by using the same man-machine interface. The Firefinder AN/TPQ-47 will be integrated into the Army Tactical Command and Control System (ATCCS) by interfacing with the Advanced Field Artillery Tactical Data System (AFATDS).</p> <p>FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • 417 Completed program planning and conducted Integrated Baseline Review (IBR) • 927 Began development and ordered parts for the Radar Environmental Simulator System (RESS) • 1489 Awarded subcontract and began internal design for development of Power Amplifier Modules • 1408 Awarded subcontract and began development of Joint Technical Architecture-Army (JTA-A) compliant operational software • 9852 Completed preliminary design and conducted Preliminary Design Review (PDR) • 611 Continued simulation efforts to develop target and clutter models and initiated effort with Theater Ballistic Missile (TBM) simulations and initiated test planning with test community • 4897 Procured long lead items Total 19601 									
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BUDGET ACTIVITY

5 - Engineering and Manufacturing Development

PE NUMBER AND TITLE

0604823A Firefinder AN/TPQ-47

PROJECT

DL85

FY 2000 Planned Program:

- 3199 Continue development of the RESS and simulation efforts to develop target and clutter models and incorporate Firefinder into TBM simulations
- 5337 Initiate development to provide early warning and cueing of TBMs
- 8278 Continue development and complete JTA-A compliant operational software design, coding and unit test
- 6189 Complete detailed system design and conduct Critical Design Review (CDR)
- 3937 Continue development and manufacture of Power Amplifier Modules and Sub Array Modules for System #1
- 11034 Complete build of System #1 Antenna Transceiver Group (ATG) and begin integration and test
- 823 Prepare Interactive Electronic Technical Manuals (IETMs) and other logistical data
- 1063 Small Business Innovative Research/Small Business Technology Transfer Programs (SBIR/STTR)
- Total 39860

FY 2001 Planned Program:

- 2403 Complete development and Validation & Verification (V&V) of the RESS modeling
- 7874 Continue manufacture of Power Amplifier Modules and Sub Array Modules for Systems #2 and #3
- 13934 Complete build of Systems #2 and #3
- 8616 Complete integration of Systems #2 and #3 and continue contractor engineering test of all systems
- 1551 Prepare training course materials and other logistics data
- 2985 Initiate development of Training Devices
- Total 37363

B. Program Change Summary	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
Previous President's Budget (FY 2000/2001 PB)	20583	32353	37589
Appropriated Value	20722	40253	
Adjustments to Appropriated Value			
a. Congressional General Reductions	-139		
b. SBIR / STTR	-536		
c. Omnibus or Other Above Threshold Reduction		-163	
d. Below Threshold Reprogramming	-364		
e. Rescissions	-82	-230	
Adjustments to Budget Years Since FY 2000/2001 PB			-226
Current Budget Submit (FY 2001 PB)	19601	39860	37363

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C. <u>Other Program Funding Summary</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	To <u>Compl</u>	Total <u>Cost</u>
Other Procurement, Army 2										
SSN: BA5100 Firefinder P3I						93504	105392	102186	522850	823932
<p>D. <u>Acquisition Strategy:</u> The EMD contract was competitively awarded as a 43 month effort beginning 1 Jul 98 to provide three (3) production representative systems; however, an additional year has been added to the EMD phase to reduce program risk and allow for additional simulation and test. The contract was re-baselined in Dec 99 to incorporate a revised 53 month program schedule and a revised program cost estimate.</p>										
E. <u>Schedule Profile</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2004</u>	<u>FY 2005</u>	
Obtained Milestone II Approval	1Q									
Awarded EMD Contract	3Q									
Conducted Integrated Baseline Review (IBR)		1Q								
Began development of the RESS		2Q								
Completed preliminary hardware/software design and conducted PDR		4Q								
Complete detailed system design and conduct CDR			2Q							
Begin fabrication of System #1 ATG			2Q							
Complete integration and begin test on System #1 ATG			4Q							
Begin fabrication of Systems #2 and #3				1Q						
Complete development of the RESS				2Q						
Initiate development of training devices				2Q						
Complete integration of Systems #2 and #3 and continue contractor engineering test of all systems				4Q						
Begin DT&E					2Q					
Conduct Initial Operational Test & Evaluation (IOT&E)						1Q				
Milestone III Decision						2Q				
Production Contract Award						2Q				

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ARMY RDT&E COST ANALYSIS (R-3)										DATE February 2000		
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604823A Firefinder AN/TPQ-47					PROJECT DL85		

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Primary Hardware Dev	C/CPIF	Raytheon Sys, CA/MS	900	15950	1Q-4Q	31450	1Q-3Q	27000	1Q-3Q	10450	85750	
b. Ancillary Hardware Dev	TBD	Various	521	1484	1Q-3Q	1105	1Q-2Q	1971	1Q-2Q	2315	7396	
c. Trainers Dev	SS/TBD	Raytheon Sys, CA/MS						2568	2Q	9574	12142	
d. Sys Engrg (Contractor)	C/FP	Various	1195	159	2Q-3Q	1410	2Q	360	1Q	260	3384	
e. Sys Engrg (Government)	MIPR	Various	454	359	1Q-3Q	484	1Q-2Q	484	1Q-2Q	756	2537	
f. Software Engineering	C/FP	Telos, OK	263	200	3Q	1873	1Q	375	1Q	375	3086	
g. SSEB	MIPR	Various	187								187	
Subtotal Product Development:			3520	18152		36322		32758		23730	114482	

Remark - Primary Hardware Development: As part of the Firefinder AN/TPQ-47 EMD contract, Raytheon Systems committed to an investment of \$16.4M. The original contract value was \$73.7M, comprised of the Government portion of \$57.3M and the contractor investment of \$16.4M. To implement the investment, Raytheon billed for only 50% of all allowable costs for the first \$32.8M of the program.

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Development Support - Contractor	C/FP	Various				0		150	1Q	250	400	
b. Development Support - Government	MIPR	Various	304	157	1Q-2Q	193	1Q-2Q	245	1Q-2Q	509	1408	
c. Integrated Logistics Spt (ILS) - Contractor	TBD	Various	35	10	2Q	89	2Q	192	2Q	234	560	
d. ILS Support-Government	MIPR	CECOM, Ft Mon, NJ	36	55	2Q	83	1Q	149	1Q	574	897	
e. Configuration Mgmt Spt-Government	MIPR	CECOM, Ft Mon, NJ	26	148	1Q-2Q	188	1Q	199	1Q	342	903	
Subtotal Support Costs:			401	370		553		935		1909	4168	

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	<u>FY 1999</u> Cost	<u>FY 1999</u> Award Date	<u>FY 2000</u> Cost	<u>FY 2000</u> Award Date	<u>FY 2001</u> Cost	<u>FY 2001</u> Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Development Test & Evaluation (DT&E)	MIPR	Yuma, AZ WSMR, NM						1250	2Q	3850	5100	
b. IOT&E	MIPR	Various								600	600	
c. Test Support	MIPR	Various	219	202	2Q	276	1Q-2Q	597	1Q-2Q	323	1617	
Subtotal Test and Evaluation:			219	202		276		1847		4773	7317	

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	<u>FY 1999</u> Cost	<u>FY 1999</u> Award Date	<u>FY 2000</u> Cost	<u>FY 2000</u> Award Date	<u>FY 2001</u> Cost	<u>FY 2001</u> Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. Program Management - Contractor	C/FP	Various	356	215	1Q-2Q	398	1Q-2Q	423	1Q-2Q	645	2037	
b. Program Management - Government	MIPR	CECOM, Ft Mon, NJ	50	111	1Q	120	1Q	145	1Q	243	669	
c. Product Manger Office - Internal Support		CECOM, Ft Mon, NJ	284	551	1Q-4Q	1128	1Q-4Q	1255	1Q-4Q	1533	4751	
d. SBIR/STTR						1063					1063	
Subtotal Management Services:			690	877		2709		1823		2421	8520	

Project Total Cost:			4830	19601		39860		37363		32833	134487	
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